

Abstract

The fuel injection system has a high-pressure pump (14) that delivers fuel at high pressure to an accumulator (16). A fuel supply pump (12) delivers fuel to the suction side of the high-pressure pump (14). A fuel metering unit (36) is provided between the fuel supply pump (12) and the high-pressure pump (14) and can variably adjust the fuel quantity taken in by the high-pressure pump (14). The accumulator (16) is connected to at least one injector (20) that injects fuel into the engine, and a return (24) leads from the at least one injector (20). The fuel return (24) from the at least one injector (20) feeds into the connection between the fuel supply pump (12) and the fuel metering unit (36). A connection (40) controlled by a pressure valve (42) leads from the fuel return (24) to a discharge region (10). The high-pressure pump (14) only draws fuel from the fuel return (24) in operating states in which the fuel quantity delivered by the fuel supply pump (12) is less than the required intake quantity of the high-pressure pump (14).